AMENDMENT NO. 3 DECEMBER 2014
TO
IS 13369 : 1992 STATIONARY LEAD-ACID BATTERIES (WITH TUBULAR POSITIVE PLATES) IN MONOBLOC CONTAINER — SPECIFICATION

(*Page* 2, *Table* 1) — Substitute the following table for the existing table:

Table 1 Maximum Overall Dimensions of 6V and 12V units

(*Clause* 7.1)

Voltage	**Capacity at 10 h Rate**	**Maximum Overall Dimensions**		
		Length	Width	Height
V	Ah	mm	mm	mm
(1)	(2)	(3)	(4)	(5)
6	20	480	186	385
6	40			
6	60			
6	80			
6	100			
6	120			
6	135			
6	165			
6	180			
6	200			
6	300	535	295	450
12	20	535	295	450
12	40			
12	60			
12	80			
12	100			
12	125			
12	150			
12	200			

Price Group 1

NOTES

1 The length and width dimensions given in this table may be interchanged.

2 For capacities not covered in Table, the cell dimensions shall not exceed the dimensions of the cell of next higher size covered by this table.

[*Page* 4 *clause* **11.1.1** (g)] — Insert the following at the end:

‘h) Water loss test (*see* **11.9**); and
j) Equilibrium float current test (*see* **11.10**).’

(*Page* 4, *clause* **11.5.1**, *para* 1, *sentence* 2) — Substitute the following for the existing sentence:

‘The discharge shall be stopped when the closed-circuit voltage across the battery terminal falls to 5.4 V for a 6V battery or to 10.8V for a 12V battery.’

(*Page* 4 *clause* **11.5.4**) — Substitute ‘battery’ *for* ‘cell’ wherever it appears.

(*Page* 5, Table 3) — Substitute the following for the existing table:

Table 3 Capacities and Final Battery Voltages at Various Rates of Discharge at 27°C

(*Clause* 11.5.7.1)

Sl No.	**Rate of Discharge**	**Capacity Expected as Percentage of C10 Capacity**	**End V**	
			6V Monobloc	12V Monobloc
(1)	(2)	(3)	(4)	(5)
i)	C_1	50.0	5.25	10.5
ii)	C_3	71.7	5.40	10.8
iii)	C_5	83.3	5.40	10.8
iv)	C10	100.0	5.40	10.8

(*Page* 5, *clause* **11.5.7.2**) — Insert the following new clause:

‘**11.5.7.3** The measured capacity shall not be more than 130 percent of the rated capacity corrected to 27° C as specified in **10.5**.’

(*Page* 5, *clause* **11.6.2**, *line* 1) — Substitute ‘battery’ *for* ‘cells’.

(*Pages* 5 *and* 6, *clause* **11.7**) — Substitute the word ‘battery’ *for* ‘cells’, wherever appears.

(*Page* 5, *clause* **11.7.1.1**) — Delete.

[*Page* 5 *clause* **11.7.3**, *line* 4 (*see also Amendment No.* 1)] — Substitute ‘5.4V for a 6V monobloc and 10.8V for a 12V monobloc’ *for* ‘1.80V’.

(*Page* 6, *clause* **11.8.2.1**) — Insert the following new clauses at the end:

‘**11.9 Water Loss Test**

11.9.1 The test shall be carried out on a battery which has successfully passed the capacity test specified in **11.5**.

After fully charging the battery it should be cleaned and dried. It should be weighed immediately but not exceeding 1h after drying with an accuracy of 0.05 percent or maximum least count of 10 g for the balance used. The weight thus found is noted as W_1. Then all vent-cum-filling plugs should be closed tightly and connected to constant voltage charger keeping the voltage 7.2 ± 0.1V for a 6V monobloc or 14.4 ± 0.1 V for a 12V monobloc for 21 days in water bath at a temperature of 50 ± 2 ^{o}C. Thereafter the battery is removed from circuit, dried and weighed accurately. The weight thus found is noted as W_2. The loss of weight is calculated as the difference ($W_1 - W_2$). This difference is then divided by the actual obtained capacity of the battery as found in the preceeding capacity test as per **11.5** of this specification and the result is noted as the water loss per Ampere-hour of the battery.

The water loss shall not exceed 9 gm/Ah/battery for a 6V monobloc or 18 gm/Ah/ Battery for a 12V monobloc unit.

11.10 Equilibrium Float Current Test

11.10.1 The test shall be carried out on a battery which has successfully passed the capacity test specified in **11.5** during the initial 3 days (72 h) of the water loss test. The test procedure shall be as specified in **11.9**.

11.10.2 After completion of 72 h, the float current drawn by the battery shall be measured. The float current shall then be measured. The equilibrium float current is measured using the following equation:

Equilibrium float current (mA/Ah) = Measured float current/ C 10 capacity of the battery

The equilibrium float current shall not be more than 10 mA/Ah.

(ETD 11)

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